Investigation Report
Department of Health
Clean Water Branch

I D #: PA0991B Date of investigation: 1/4/2011

Permit/File/WQC No: R50A533 Island: Oahu Facility: Waste Management Hawaii/ CCH

Complaint/Background Description:

On January 4, 2011, the Department of Health (DOH), Clean Water Branch (CWB), conducted an inspection of the City and County of Honolulu (CCH) Waimanalo Gulch municipal solid waste landfill (Landfill) which is located at 92-460 Farrington Highway, Kapolei, Hawaii. The inspection was conducted as a follow up to the inspection conducted on December 23, 2010. Matthew Kurano and Michael Tsuji of the DOH-CWB conducted the January 4, 2011 inspection. Dr. Wendy Wiltse of the US Environmental Protection Agency (EPA) was present during the inspection. Justin Lottig, Market Area Environmental Protection Manager and Jesse Frey, Landfill Engineer, for Waste Management were present during the inspection. Waste Management operates the Landfill.

Permit History

The CCH, Refuse Division, owns the Landfill and has National Pollutant Discharge Elimination System (NPDES) permit coverage through a general permit authorizing the discharge of storm water associated with industrial activities. The Landfill's Notice of General Permit Coverage (NGPC), File No. HI R50A533, only authorizes the discharge of storm water discharges associated with industrial activities that will not cause or contribute to a violation of applicable State water quality standards and comply with permit effluent limitations. Discharges of effluent, leachate, or solid wastes are not permitted by the issued NGPC.

The NGPC, File No. HI R50A533, was effective as of August 30, 2010, and expires on October 21, 2012.

A previous inspection of the Landfill was conducted on December 23, 2010. The previous inspection is documented in Investigation Report ID#s, PA0991 and PA0991A.

Findings Description:

The weather was mostly sunny throughout the inspection. The following findings were either observed or noted before, during or after the inspection:

1) On January 4, 2011, M. Kurano, M. Tsuji, and W. Wiltse conducted an unannounced inspection of the Landfill. CWB and EPA representatives met with J. Lottig and J. Frey of Waste Management at the Landfill. CWB representatives requested to inspect the Landfill's detention basin, E6 cell and subsurface storm water diversion pipe located above the E6 cell.

2) The Landfill's detention basin (Photograph 1) was full of turbid water at the time inspection. The Landfill pumped storm water which had contacted municipal solid waste in the E6 cell into the detention basin between December 19, 2010 and December 23, 2010. According to both J. Lottig and J. Frey, no pumping of storm water, leachate, or potentially contaminated storm water from the E6 cell into the detention basin had been conducted since December 23, 2010.

3) On December 23, 2010, J. Lottig of Waste Management stated that the 36-inch subsurface storm water drainage pipe was the only means for storm water run-on to divert around the E6 cell. On December 27, 2010, a significant rain event had occurred at the Landfill. Waste Management representatives stated that the E6 cell (Photograph 2) was inundated with storm water run-on because the 36-inch subsurface storm water drainage inlet located above the E6 cell had become obstructed similarly to how it had as a result of the December 19, 2010 rain event. Waste Management representatives stated that as a result, the E6 cell was flooded with storm water run-on on between December 27, 2010, and December 28, 2010.

4) The water observed in the E6 cell appeared highly turbid at the time of the inspection. The top of the turbid water was partially covered with a layer of sludge-like debris which included solid waste (Photograph 3). Solid

waste was observed comingled with the turbid water in the E6 cell. A high water mark (Photographs 2 and 4) was observed in the E6 cell. The water level observed (Photograph 4) appeared to have decreased significantly as the water level observed was much lower than the high water line. J. Lottig stated that the water level must have decreased due to evaporation and percolation.

5) M. Kurano asked J. Frey, the Landfill's Engineer, whether he believed that the water observed in the E6 cell could have percolated through and entered into the leachate system or whether the leachate from the E6 leachate collection system could have diffused into the water ponded in E6. J. Frey stated that he believed both cases were impossible. J. Frey stated that the layer of material on the bottom of the E6 cell would be so impacted that it would act like "bentonite" and be impervious. J. Frey further stated that the leachate system had a flange that would have closed off the leachate sump from the water impounded in E6. It was unclear whether J. Frey's statement about the imperviousness of the leachate sump was accurate based upon the percolation noted by J. Lottig and the unknown condition of the leachate collection system at the time of inspection.

6) The southwest side of the E6 cell (Photograph 5) was delineated by an earthen berm/dam that was constructed to contain run-on if the E6 cell was again flooded. Downstream of the earthen berm/dam is a graded path that would channel discharges from the E6 cell to where Kahe Generating Station is located (Photograph 6) if the berm/dam failed. J. Frey and J. Lottig stated that in the event of a failure of the earthen berm/dam located on the southwest side of the E6 cell, the impounded water would flow down the graded path into the area directly above the Kahe Generating Station.

7) J. Lottig stated that in preparation for a future rain event, the Landfill had increased the height of the earthen berm/dam on the southwest side of the E6 cell (Photograph 7) and had opened a manhole in the "Hobas" pipe (Photograph 8) which discharges into the Landfill's concrete lined storm drainage channel. A pipe placed as a overflow pipe between the E6 cell and the opening of the Hobas pipe was observed (Photographs 7 and 8). The manhole in the Hobas pipe on the southwest side of the E6 cell was open at the time of inspection; however, no solid waste was observed around the opening to the Hobas pipe.

8) Discharges from the E6 cell into the Hobas pipe would flow down the Landfill's concrete lined drainage channel and into the Landfill's detention basin before being discharged into the Pacific Ocean. By opening the Hobas pipe and creating a culvert which connected the E6 cell to the open Hobas pipe, the Landfill created a direct connection between the E6 cell and the detention basin.

9) Between December 19, 2010, and December 23, 2010, the Landfill discharged contaminated storm water from the flooded E6 cell. Waste Management representatives stated that the water collected in the E6 cell had been pumped into the opening of the Hobas pipe which was located on the southwest side of the E6 cell (Photograph 8).

10) CWB and EPA representatives inspected the area above the E6 cell (Photograph 9). Large earth moving construction activities were being conducted at the time. Waste Management temporarily suspended the ongoing construction activities so that the 36-inch subsurface storm drain inlet (Photograph 10) could be observed. J. Frey stated that sediment and rocks had deposited around and over the inlet during the December 27, 2010 rain event, effectively burying it as it had during the December 19, 2010 storm event.

11) Waste Management representatives indicated that the reason the E6 cell flooded was because the 36-inch subsurface storm drain inlet had been buried.

In conclusion, it appeared that no further discharges from the E6 cell occurred between December 23, 2010, and January 4, 2011. The E6 cell appeared to have been flooded for a second time due to a rain event which occurred on or about December 27, 2010. The Landfill's 36-inch subsurface storm drain inlet had again failed due to being buried by sediment and rocks; however, the retention capacity of the E6 cell impounded all of the storm water run-on from the December 27, 2010 rain event. J. Lottig and J. Frey stated that they were aware that discharges of the water impounded in the E6 cell to State waters would be a violation of Water Pollution

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rules and regulations.

Name: Matthew Kurano
Signature: [signature]
Title: EHS
Date: Feb. 8. 2011

Name: Michael Tsuji
Signature: [signature]
Title: Enforcement Section Supervisor
Date: 2-8-11

Photograph # 1 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of the detention basin, from the detention basin's berm. The detention basin was filled with highly turbid water at the time of inspection.

Photograph # 2 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View facing north of the E6 cell from the cell's berm/dam. The 36-inch subsurface storm water inlet is located North of the E6 cell (Red Arrow). Significant amounts of water were still ponding within the E6 cell at the time of inspection.

Photograph # 3 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of ponded water on the south side of the E6 cell. A layer of a sludge-like substance that included solid waste had accumulated on the top of the ponded water in the E6 cell. Solid waste water observed from the high water mark to observed water level.

Photograph # 4 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of the E6 cell. The water level in the E6 cell appeared to have decreased significantly as compared to the level indicated by the high water mark (Red Arrow).

Photograph # 5 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

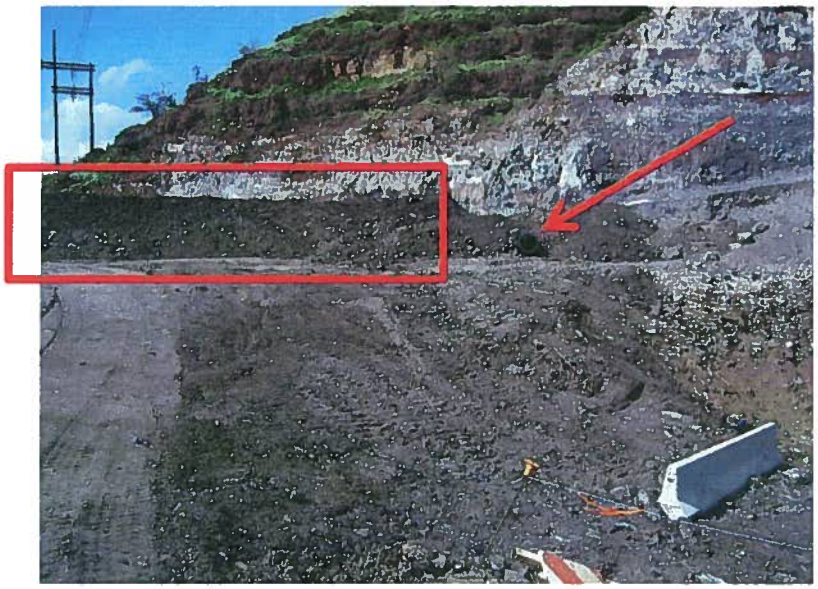
Description: View of the berm/dam (Red Box) on the southwest side of the E6 cell. In the event that the E6 cell floods, the berm/dam is the only structure that contains the water impounded in the E6 cell.

Photograph # 6 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of a the graded path that connects the E6 cell to the Kahe Generating State valley. In the event of the E6 berm/dam failing, discharges from the E6 cell would flow down this path towards the Kahe Generating Station valley.

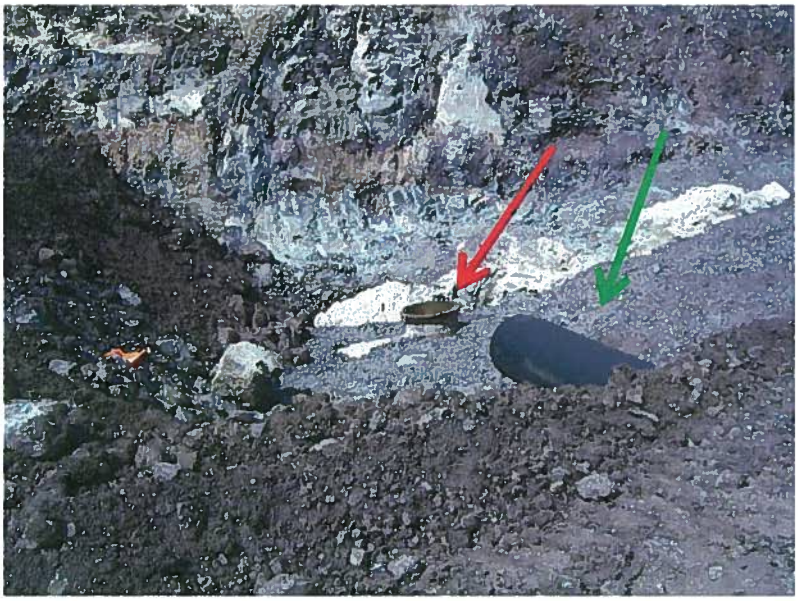


Photograph # 7 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of the earthen berm/dam (Red Box) on the southwest side of the E6 cell. Note the "overflow" pipe (Red Arrow) which connects the E6 cell to the opening of the "Hobas" pipe.



Photograph # 8 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of the manhole in the "Hobas" pipe (Red Arrow). Discharges into the "Hobas" pipe flow down the Landfill's concrete lined channel and into the Landfill's detention basin before being discharged into the ocean. The corrugated pipe (Green Arrow) is the same pipe pictured in Photograph 7.

Photograph # 9 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of the area immediately north of the E6 cell. The 36-inch subsurface storm water inlet (Red Arrow) is located behind a berm north of the E6 cell.

Photograph # 10 Date: January 4, 2011

Observers: Matthew Kurano, Wendy Wiltse, Michael Tsuji

Location: 92-460 Farrington Highway, Kapolei, Hawaii

Description: View of the 36-inch subsurface storm water inlet (Red Arrow). The grate inlet extends vertically but was buried under a layer of rock and sediment during recent storm events and at the time of inspection.

I certify that the *ten (10)* attached photos described above were taken by the undersigned and are a true, accurate, and unaltered representation of what was observed on *January 4, 2011* at the *Waimanalo Gulch Sanitary Landfill, 92-460 Farrington Highway, Kapolei, Hawaii*.

Matthew R. Kurano

Feb 8, 2011

Matthew R. Kurano

Date